UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

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MAY 25 1999

REPLY TO THE ATTENTION OF:

SRF-5J

Mr. Johnny Reising
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

RE: Leachate System Investigation Report

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (U.S. DOE) leachate conveyance system investigation report for the On-Site Disposal Facility (OSDF). The report contained the findings of the investigation of leaks in the leachate collection system. The Fluor Daniel Fernald report describes the scope of the investigation, the history of the gravity pipeline installation in 1997, findings and conclusions of the leak investigation conducted in 1999, and other lessons learned. The Geosyntec report contains nine sections and more thoroughly evaluates the technical performance, construction details, pressure testing, and also provides findings, conclusions and recommendations.

Both reports thoroughly evaluate the factors that caused the leaks in the pipeline and suggest several areas of improvement. U.S. EPA provides the following comments on the investigation report.

1. Hydrostatic Testing Procedure: The 6-inc-diameter carrier pipe's becoming oval during hydrostatic testing was caused by use of a procedure that was not designed for a dual-pipe configuration. In addition, the procedure used for testing the containment pipe was not adequately documented. When conducting hydrostatic tests in the future, the Construction Quality Assurance (CQA) engineer should ensure that the procedure used during field testing is thoroughly documented.

2. Electrofusion Coupling: Three of the four documented leaks were found at pipe locations where electrofusion coupling was used. Electrofusion coupling is not as effective as butt-welding of high-density polyethylene pipes and should not be used. If electrofusion coupling is unavoidable at certain locations in the future, care should be taken to follow CQA procedures, and only personnel having specialized experience in electrofusion coupling should be used.

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3. Design Changes in Selection of Materials: Numerous design changes were prepared during construction on the leachate transmission line. However, during construction, insufficient attention was given to the impacts of these changes on system performance. A method of identifying design changes that affect system performance should be developed, and a substantive design changes should be thoroughly reviewed by the design engineer and regulatory agencies.

4. Pipe Installation: During future installation activities, pipes should be laid in such a way that butt-welding of the pipe is possible. Also, equipment working in the vicinity of the pipes should be monitored to prevent damage to the pipes. Moreover, hydrostatic testing of pipe joints should be completed before the pipe trench is backfilled or a soil cover is placed over the pipes.

Please contact me at (312) 886-0992 if you have any questions regarding this matter.

Sincerely,

James A. Saric
Remedial Project Manager
Federal Facilities Section
SFD Remedial Response Branch #2

cc: Tom Schneider, OEPA-SWDO
Bill Murphie, U.S. DOE-HQ
John Bradburne, FERMCO
Terry Hagen, FERMCO
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